

Intensity distribution of scalar waves propagating in random media

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Transmission of the scalar field through the random medium, represented by the system of randomly distributed dielectric cylinders is calculated numerically. Universality of the statistical distribution of transmission parameters is analyzed. In the band gaps, we distinguish the disorder induced (Anderson) localization from the tunneling through the system due to the gap in the density of states. We show also that absorption causes rapid decrease of the mean conductance, but, contrary to the localized regime, the conductance is self-averaged with a Gaussian distribution.

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